Instructional Design Philosophy

Executive Summary

Instructional Design Principles: MindLeaders training is based on sound principles from research in instructional design, adult learning, and information processing. MindLeaders believes that for training to be effective, the learner must view the training as meaningful and relevant. The learner must be engaged as an active participant.

Curriculum Structure: A MindLeaders curriculum is divided into courses, which are divided into units. Each unit consists of a well-defined set of learning objectives, a series of interactions that teach the stated objectives, and a means for evaluating whether the learning objectives have been met.

Instructional Design Strategy: At every stage of MindLeaders course development (analysis, prototyping, production, and quality assurance), MindLeaders applies specific principles and training models to the creation of effective courseware.

Delivery: For courses to teach, they must be accessible in a variety of contexts and environments. For this reason, MindLeaders makes its courses playable in almost any circumstance.

MindLeaders Instructional Design Philosophy Detail

A. Instructional Design Principles

Strategy Based on Research

MindLeaders' instructional design strategy is based on training principles that are well-documented in the literature on instructional design, adult learning, and information processing.

MindLeaders Training Principles

The following principles characterize our approach to training.

- The learner identifies with the task to be learned and sees immediate application of that knowledge to his or her job.
- The learner is actively engaged in the learning.
- The training gives the learner an opportunity to practice in a safe, non-threatening environment.
- Immediate and supportive feedback reinforces the learning.
- The learner can demonstrate his or her competency, before, during, and after instruction.
- The training is organized and logically sequenced based on the needs of the target learner.
- The learner controls the pace and training path of the instruction.

Achieving Maximum Results

MindLeaders bases its instructional design on these principles because their implementation makes it more likely that new knowledge and skills will be remembered and retrieved for future use.

Maintaining Motivation

In addition, by making these principles part of the design of the instruction, learners are not only motivated to start the training program, but also to stick with it. Learners also display a feeling of satisfaction and confidence as they progress.

B. Curriculum Structure

The Components of a Course

A MindLeaders curriculum is divided into courses, which are divided into units. Each unit consists of:

- A well-defined set of learning objectives.
- A series of interactions that teach the stated objectives.
- A means for evaluating whether the learning objectives have been met.

Learning Objectives

A learning objective is a statement of what we expect the learner to be able to do after working through the material in a unit.

The objectives are defined at the start of each unit.

Interactions

Interactions are the methods we use to teach the material.

We want to provide the learner not only with a sound understanding of underlying concepts, but also with frequent opportunities for practice in the form of simulations and exercises.

Assessments

Assessment consists of simulations and a range of question types, such as:

- Text-entry with a single field or with multiple fields
- Multiple choice with one correct response or with more than one correct response
- Matching
- Sequencing

Meaningful Objectives

To ensure that instruction is meaningful, relevant, and organized, MindLeaders follows these guidelines when creating course objectives:

- Objectives must be relevant: the learner recognizes why the knowledge is important.
- Objectives must be specific: the learner knows what he or she is expected to perform.
- Objectives must be mapped to certification requirements (where appropriate): the learner will be prepared to take a certification exam.
- Objectives must be in a logical, organized sequence that reflects the overall objectives of the curriculum and course: the learner will build his or her knowledge in a logical and understandable manner.

Teaching a Specific Skill

The type of instructional content — fact, concept, process, procedure, or principle — determines what form of interaction MindLeaders uses to teach it.

For example, when developing skills training for a specific procedure, MindLeaders applies a four-phase model, based on Bloom's Taxonomy. The phases are described in the following section:

Phase 1: Present the Concept (Knowledge)

Clearly written text and supporting visuals explain the purpose of the procedure, what steps are involved, and what rules apply.

Phase 2: Demonstrate the Procedure (Comprehension)

Simple instructions coupled with replications of application screens then guide the learner through the task, presenting one step per screen.

"Click-to-continues" ask the learner to identify a specific portion of an application screen to move to the next step. The goal is to give the learner a chance to walk through a task rather than simply explaining how it is done.

Phase 3: Allow for Guided Practice (Application)

Simulations provide the learner with an opportunity to perform a task in a guided context, with hints and feedback.

Simulations can be practiced multiple times, allowing the learner to become comfortable within the application being learned.

Phase 4: Allow for Non-Guided Practice (Synthesis)

MindLeaders courses supply source files and instructions for exercises that the learner can try out on his or her own computer, applying the material to actual situations and applications.

Exercises enable the learner to perform the procedure in a new context without assistance.

Practical Training

By implementing this four-phase model, MindLeaders produces courses that are highly interactive, thereby engaging and motivating the learner.

The simulations provide real-world scenarios in a secure environment; the exercises empower learners to transfer their learning to a new situation and take charge.

Teaching a Programming Language

Learning to use a programming language requires a different model than learning to use an application interface.

When teaching how to code in a programming language, MindLeaders applies a four-phase model, based on Bloom's Taxonomy. The phases are described in the following section:

Phase 1: Introduce the Basics (Knowledge)

Coding syntax clearly identifies each component of a programming language statement or command.

The explanation and short examples accompanying the syntax make its purpose and usage apparent.

Phase 2: Illustrate the Code's Use in Context (Comprehension)

Sample listings complete with line-by-line analyses and sample output show how the code is used within a program.

Non-examples illustrate how code should not be used.

Tips show how to make code more efficient; warnings focus on problems and side effects in specific situations.

Phase 3: Provide Guided Practice (Application)

Coding simulations first allow the learner to practice entering fragments of code and then provide practice writing more complex lines of code.

The progression of these simulations builds on the learner's prior knowledge. Early simulations require recoding of examples already presented, while later ones introduce new coding tasks, requiring more problem solving and creative thinking.

Phase 4: Provide Materials for Non-Guided Practice (Synthesis)

Practice files provide the learner with programs to enhance and compile. Other practice files are intentionally flawed to allow the learner to practice debugging techniques.

Many practice files have a corresponding "answer" file, which allows learners to compare their results with one possible solution.

Measuring the Results

Along with models for writing sound instructional objectives and developing quality interactions, MindLeaders development also follows a well-defined model for creating assessments.

Assessment Options

Assessments take a variety of forms. Mastery tests and questions embedded in the course provide the learner with information about how his or her learning is progressing. The learner also has the option of taking a preliminary test, which supplies information on his or her existing knowledge base. This information guides learners in developing their own learning path through the course.

Assessments also help prepare learners for the requirements of vendor certification exams.

Proficiency Gauges

A learner can take the preliminary and mastery tests at any time. The tests are composed of questions chosen randomly.

Content Questions

Learners answer embedded questions as they progress through a course. The questions parallel the content of the learning objectives and, through informative feedback, also teach as they test.

The high frequency of embedded questions keeps the learner motivated and actively engaged in the course content.

Carefully Constructed Questions

MindLeaders' courseware development team follows a strict set of guidelines when creating questions and the quality assurance team uses these guidelines to evaluate the results.

Standards for Course Questions

The following are some of MindLeaders' question-writing guidelines:

- Write specific questions with clear directions.
- Write one or more questions to cover every learning objective.
- Embed questions at regular intervals to keep the interaction high.
- Aim for questions that challenge the learner to use higher-level cognitive skills, such as detecting errors in logic, making an inference, solving a problem, or evaluating options.
- Incorporate a thorough answer analysis that anticipates all probable responses from the learner.
- Allow for multiple tries.
- Choose the question type that best tests a learning objective. For example, sequencing questions are valuable in checking a learner's understanding of the order of steps in a procedure or process. Matching questions can be used to test for understanding of multiple terms and concepts.
- Write feedback that is supportive and that reinforces what the learner has just learned.
- Sequence questions so that they progress from…
    - The familiar (building on the learner's prior knowledge) to the unfamiliar.
    - Foundation skills to more advanced skills.
    - Recognition (understanding) to production (using).

C. Instructional Design Strategy

From Theory to Practice

The training principles and models described previously are the basis for MindLeaders' instructional design strategy.

Our course development process consists of the following stages: Analysis, Prototyping, Production, and Quality Assurance. At every stage, MindLeaders' training principles ensure the effective design and delivery of instruction to the learner.

Finding New Course Material

MindLeaders subject matter experts analyze potential topics year-round, ensuring that the topics most in demand can quickly be brought into production.

Start with Quality Content

MindLeaders partners with the industry's top independent experts to deliver unbiased, accurate, and thorough content.

Content specialists analyze the target audience's needs and determine the learning objectives to meet those needs. From these objectives, they identify the organizational structure most effective for the curriculum, course, and unit levels.

Matching Certification Requirements

When appropriate, objectives are mapped to certification requirements and submitted for approval by the certifying vendor's representative.

The Course Framework

At the prototyping stage, MindLeaders course designers analyze the source content to determine the best way to present the material. They create a prototype course containing all features including representative simulations, exercises, and questions to be contained in the finished course.

Simultaneously, the course design team establishes the guidelines, procedures, and tools to be used in the production environment. The result is a model for the production team's creation of multimedia instruction.

Maximum Visual Effect

In parallel, MindLeaders graphic designers determine the most suitable visual interpretation of the ideas and concepts in the instructional material. The visual images they create for the prototype guide the graphic production team in creating a consistent style of graphics within a course and across courses. MindLeaders' exceptional visuals and creative animations gain the learner's attention and maintain interest.

Consistent Presentation

The prototyping process not only ensures that the instructional elements most suited to the given source material are implemented, but also that each course complies with the interface design of all MindLeaders courses, established by user testing to be effective and easy to use.

Team Strategy

MindLeaders developers take the content analysis and prototype models from the first two phases of the course development process, and systematically construct the course.

Course development is a joint effort, involving the courseware team, the simulation team, and the graphics team.

Course Construction

The courseware developers chunk the content into appropriately sized learning modules, sequence them logically, and provide an organizational structure through overviews, advance organizers, transitions, and summaries. They ensure the language is clear and concise, and that the tone is friendly and inviting.

Graphic Enrichment

While mapping the content, courseware developers work in tandem with the graphics team to seamlessly integrate visual components with the content.

Practical Interactions

A significant portion of course development time goes into the construction of the interactions that support the learning process.

Courseware developers work with the simulation team to create concrete, real-world simulations. In addition, they create a wide variety of questions and exercises that challenge the learner to perform at increasing levels of difficulty.

Finding Information Quickly

The courseware developer also creates the features that allow just-in-time access to course content. Learners can quickly find information using the course topics list and/or the index.

By positioning the list of topics or the index side-by-side with the course, the learner can rapidly scan any part of the course to see if it meets his or her immediate needs. In addition, learners can use the glossary.

More Options and Control

Although MindLeaders courseware is primarily designed as linear instruction, these features, along with other navigation options, give the learner total control over his or her training path.

Multiple Safeguards

MindLeaders takes pride in the quality of its products.

We ensure this quality by including multiple quality control checkpoints in the course development process. Course text, graphics, questions, simulations, and exercises are all subjected to multiple in-house reviews.

In addition, courses are reviewed for consistency across a curriculum. The quality assurance team also ensures that courses run trouble-free on every delivery platform.

Internal and External Testing

In addition to in-house reviews, MindLeaders conducts end-user testing to verify that the interface is effective and easy to use, and to make sure each course attains its objectives.

Another vehicle for assuring quality is client feedback. We take seriously the comments that our clients share with us.

Furthermore, MindLeaders certified courses are audited by the vendor's representative to ensure that MindLeaders instructional design is sound and that the courses support the specified learning objectives.

D. Delivery

Meeting Learners Wherever They Are

The end result of MindLeaders four-stage development effort is instructionally sound, technically accurate, and visually appealing courses.

But our courses cannot teach unless the learner can readily access them in a variety of contexts and environments at work, at home, or on the road.

Availability Options

MindLeaders makes its courses playable directly over the Internet, without downloading.

Operating System Options

MindLeaders also delivers its courses on a variety of platforms, including Windows 95, Windows 98, Windows NT, Windows 2000, and UNIX.

Creating a Superior Training Product

Flexible distribution, coupled with comprehensive content, high interactivity, and easy navigation, allow MindLeaders to offer courses that stand above all other self-paced training alternatives.

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